and Brochantite with Atacamite, the streak of which is of a characteristic apple-green.

M. Pisani has published analyses of the two above-described minerals. In the former (possibly from having driven off part of the water in the preliminary desiccation of the mineral) he has found less water than I consider it really to contain, and he has consequently given to Langite the formula of Waringtonite.

The green mineral which he has analyzed and described as Brochantite seems, from his analysis, to have contained a slight admixture of the ferruginous matrix, and also differs from mine in the estimate of the water.

I confined my preliminary desiccation to a careful treatment of the bruised mineral with dried and warm blotting-paper, as many hydrated minerals of this class yield up part of their water when long exposed to a perfectly dry air, or to a temperature of 100° C.

II. "Preliminary Notice on the Products of the Destructive Distillation of the Sulphobenzolates." By John Stenhouse, LL.D., F.R.S., &c. Received February 15, 1865.

The salt which I have hitherto chiefly employed is the sulphobenzolate of soda, $C_{12}H_5NaSO_3$, which was prepared according to Mitscherlich's* directions, by precipitating crude sulphobenzolate of lime by carbonate of soda, separating the carbonate of lime produced, and evaporating the clear solution to dryness. The finely powdered salt, which had previously been thoroughly dried, was introduced into a small copper retort and subjected to destructive distillation, when a considerable quantity of carbonic acid was evolved, and a brownish-coloured oily liquid, covered by a layer of water, collected in the receiver.

This oil was separated from the water and distilled in a retort furnished with a thermometer. The liquid began to boil at 80° C., and then rose slowly to 110° C., when only a small quantity of water, and an oil consisting chiefly of benzol, came over. The boiling-point then rapidly rose to 290° C., at which temperature the greater portion of the liquid distilled over, leaving a black residue in the retort.

The oil boiling at 290° C. is of a pale yellow colour, heavier than water, and has an aromatic and slightly alliaceous odour. It contains a considerable amount of sulphur.

When this oil is brought in contact with nitric acid, a very violent action ensues with evolution of nitrous fumes, and when the resulting solution is poured into water, a crystalline mass of a pale yellow colour is obtained. This, when dried and washed with ether to separate a small quantity of adhering oil, is dissolved in hot spirit, from which, on cooling, two colourless crystalline substances separate.

The first of these, which constitutes the bulk of the product, forms beautiful rhombic plates, which, when crystallized out of benzol, may be

* Pogg. Ann. vol. xxxi. pp. 283 & 634.

obtained of considerable size and great lustre, closely resembling chlorate of potassa in appearance. This body also contains sulphur. The second substance, the quantity of which is comparatively small, crystallizes in long thin plates.

The oil, when treated with concentrated sulphuric acid, dissolves with a fine purple colour, and from this solution water precipitates a crystalline body, an organic acid remaining in solution, which forms a crystalline lime-salt.

I have likewise subjected to destructive distillation the sulphobenzolates of lime, ammonia, and copper. The two last yield very different products from the soda-salt.

I am at present engaged in examining these as well as the other bodies mentioned in this Notice, and hope soon to be able to communicate to the Society the results of my investigations.

III. "Preliminary Note on the Radiation from a Revolving Disk." By Balfour Stewart, M.A., F.R.S., and P. G. Tait, M.A. Received February 23, 1865.

The authors having been led by perfectly distinct trains of reasoning to identical views bearing on the dissipation of energy, have had preliminary experiments made on the increase of radiation from a wooden disk on account of its velocity of rotation, both in the open air and *in vacuo*.

These experiments were made with a very delicate thermo-electric pile and galvanometer. In the experiments in the open air the disk was of wood; its diameter was 9 inches, and it was made to rotate with a velocity somewhat less than 100 revolutions in one second.

A sensible effect was produced upon the indicating galvanometer when the disk was made to rotate, and this effect appeared to be due to radiation, and not to currents of air impinging against the pile. In amount it was found to be nearly the same as if the disk had increased in temperature 0°·75 Fahr.

In the experiments *in vacuo* the diameter of the wooden disk was over 12 inches; its velocity of rotation was about 100 revolutions in one second, and the pile was nearer it than when in air. Under these circumstances, with a vacuum of 0·6 in., an effect apparently due to radiant heat was obtained, amounting to nearly the same as if the disk had increased in temperature 1°·5 Fahr.

Bearing in mind the increased diameter of the disk, the effect is probably equivalent to that obtained in air, and these preliminary experiments would tend to show that when a wooden disk is made to revolve rapidly at the surface of the earth, its radiation is increased to an extent depending on the velocity; and it would appear that this effect is not materially less in a vacuum of 0·6 in. than in the open air.

The authors intend to work out this and allied questions experimentally, and hope, if successful, to communicate the result to this Society.